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BOUNTY HUNTER®
METAL DETECTORS

Time Ranger™

Metal Detector

Owner's Manual

The new improved **Time Ranger™** is a top-of-the-line professional metal detector with the kind of depth performance and sophisticated features demanded by the serious metal detector enthusiast. A large LCD screen displays the current operating status at all times, and displays probable target type and depth when metal is detected. All features are either named on the touchpads or displayed on the screen, making it easy for you to program it the way you want.

- Waterproof searchcoil
- Touchpad control panel
- Microprocessor-controlled
- LCD screen with target ID readout
- Readout of ground mineral conditions
- Numeric readout of target conductivity
- SMART TRAC computerized ground balancing
- Programmable target type acceptance or rejection
- All Metals Pinpoint mode for pinpointing target position
- Self-Tuning all metals mode for maximum depth in mineralized ground
- Search for coins, lost jewelry, relics, gold nuggets, and other valuable metals

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The **Time Ranger™** can be used as a "turn on and go" metal detector (see page 4). However, you'll find a lot more if you read the manual to acquaint yourself with the many performance-enhancing features which the **Time Ranger™** offers.

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QUICK START (if you're really impatient)

If you want to get started quickly, do the following.

1. Assemble the detector (see instructions on page 10).

2. Install two **alkaline** 9-volt batteries (see instructions on page 11).

3. Press the Power ON/OFF button. The machine should turn on, giving several beeps and turning on the LCD screen.

4. When first turned on, the **Time Ranger™** starts out in preset Program #1. This is a "motion discrimination & target ID mode" with iron and foil rejected. This means that the searchcoil has to be in motion over a metal object to detect it, and that the machine will ignore objects which it has decided are probably iron or foil. .....Sensitivity starts out at medium, which is the most a beginner should use.

5. If the searchcoil is not in motion and not close to metal, the detector should be silent. If you experience false signals from electrical interference, from the soil itself, or from lots of trash metal, press the Sensitivity minus button to reduce sensitivity. This will usually make the unwanted signals go away.

6. Toss a coin on the ground and sweep back and forth over it a few times to get a feel for how the machine responds.

7. You are now ready to search for nonferrous metals such as coins, to a depth of 6-8 inches under most conditions.

8. The All Metals Pinpoint mode makes recovering a target much easier. See page 23 for details. Learn to use it at first without Smart Trac ground balancing.

THE BASICS OF METAL DETECTING

TYPES OF METAL DETECTING

The **Time Ranger™** is suitable for all five of the main types of metal detecting:

1. **"Coinshooting"** -- searching for coins, usually in places like parks and people's yards. Usually there is a lot of aluminum trash like pulltabs and bottle caps, so ability to distinguish between metal trash and coins is important. Since coinshooting is usually done in places where you're not permitted to dig holes with a shovel, extreme depth capability is not essential. Some towns have ordinances prohibiting metal detectors in parks, so if you have any doubt, check first.

2. **Relic Hunting--** searching for historical artifacts, including coins, mostly in places like fields and vacant lots where digging holes is okay. The most common unwanted metal is iron (nails, fence wire, parts of wheeled vehicles, etc.) but you may actually be searching for iron objects. For relic hunting, the important features are excellent depth capability and the ability to ignore iron metals (discrimination). Before you go relic hunting, obtain permission from the property owner. Some public lands are protected by law from relic hunting, so if you intend to hunt on public land, check first with the administrator to make sure it's not illegal.

3. **Gold Prospecting--** searching for gold nuggets. Because most nuggets are tiny, high sensitivity is needed. And because gold is usually associated with iron minerals in the soil, an accurate ground balancing system is also needed. Ability to identify targets or to ignore iron is relatively unimportant. It's best to use a small accessory searchcoil. If you're going gold prospecting, search in areas where gold is known to be present -- it's very rare nowadays to discover a new gold location. Learn to recognize posted claims and don't search on them without first getting permission. Prospecting clubs often have their own claims which are open to members.

4. **Cache Hunting--** searching for a specific buried cache, typically a jar or strongbox containing money or gold or silver bullion. This requires a ground balanced all metals mode. It's best to use an oversize accessory searchcoil. Always make sure the issue of ownership is resolved before you dig a cache.

5. **Shallow Water Hunting--** All **First Texas Products** searchcoils are waterproof, allowing you to search in shallow water. However, if you're searching around water, please be careful not to get the electronics housing wet. Because water is electrically conductive, mimicking the effects of metal, searching in the wet zone of beaches usually requires sensitivity to be reduced. If it's salt water, discrimination is usually necessary to avoid false signals. Avoid salt spray, as it will work its way into the control housing and damage the electronics-- such damage is not covered under warranty.

HOW METAL DETECTORS WORK

Most metal detectors for finding buried objects are of the "VLF Induction Balance" type. Here's how they work.

The searchcoil (also called "search head" or "loop") on the end of the rod ("stem") contains two electrical induction coils which are like antennas. The larger (outer) coil transmits a rapidly alternating magnetic field, "illuminating" the region surrounding the searchcoil. If metal is present, its electrical conductivity distorts the magnetic field. If iron metal is present, its magnetism also distorts the magnetic field, but in a different way, allowing the metal detector to distinguish between ferrous and nonferrous metals.

The smaller (inner) coil is a receiving antenna which detects changes in the magnetic field caused by the presence of metal. The electronic circuit amplifies this weak signal, analyzes it to determine what kind of change is occurring as the searchcoil is swept past the metal object, and then conveys the information to the user in the form of an audio tone and (usually) a visual display of some type.

The iron minerals which are present in most soils also distort the magnetic field, often obscuring the weaker signals from small or deeper objects. This can cause the object to go undetected, or to be misidentified if it is detected. Much of the technology that goes into modern metal detectors is devoted to the task of eliminating the unwanted signals from iron minerals in the soil, while not losing the signals from metals. The technology in the new improved **Time Ranger™** embodies the knowledge and experience of two of the best known engineers in the metal detection industry.

CAPABILITIES AND LIMITATIONS

DEPTH

The **Time Ranger™** can detect U.S. coins to a depth of about 9-11 inches under good conditions. Large objects (55 gallon drums, manhole covers, etc.) can be detected to a depth of several feet.

Electrical interference from power lines and from electrical appliances and electronic equipment can reduce detection depth, or cause audible interference making it necessary for the user to reduce the sensitivity setting. Soils with large amounts of iron or salt minerals, may also reduce detection depth or necessitate a reduction in the sensitivity setting.

TARGET IDENTIFICATION

The **Time Ranger™** identifies the probable type of metal object ("target") by measuring its “effective electrical conductivity”, which is displayed as a number from 1 to 299 on the LCD screen. The "effective electrical conductivity" of an object depends on its metallic composition, size, shape, and orientation relative to the searchcoil. Since coins are minted to tightly controlled specifications, they can be identified with good accuracy. Identification of pulltabs and foil is less consistent because these kinds of targets come in wide variety. In general, smaller objects, and objects made from lower conductivity alloys such as iron, bronze, brass, lead, pewter, zinc, etc. will read lower on the effective conductivity scale. Larger objects and objects made from higher conductivity alloys such as silver, copper, and aluminum, will tend to read higher. The notable exceptions are gold, which usually reads low because it's rarely found in large pieces; and zinc pennies, which read moderately high because of their size and shape. Although nails and other iron and steel objects will usually read as iron ring-shaped pieces of iron (for instance steel washers and harness rings) will usually give medium to high readings. Flat pieces of iron or steel, such as can lids, will occasionally do the same.

Most targets can be identified correctly in air out to about 7-10 inches. The minerals in many soils will cause identification to be less accurate. However in most soils effective target identification can be had to a depth of at least 4 to 6 inches.

REQUIREMENT FOR MOTION

Like other modern metal detectors, the **Time Ranger™** searchcoil must be kept in motion in order to both detect and identify targets. The All Metal Pinpoint mode continues to detect metal if searchcoil motion stops over the target. This mode is used primarily to pinpoint the exact location of a target so that it can be retrieved with a minimum of digging, and does not provide target identification. The **Time Ranger™** also features a Self-Tuning All Metal mode in Program #4. Under most conditions, this is the deepest and most sensitive mode. It is used primarily for gold prospecting and for relic hunting in areas where there isn't a lot of metal trash, and does not provide target identification.

GROUND BALANCING

To achieve maximum depth in both the All Metals Pinpoint and Self-Tuning all metals modes, the **Time Ranger™** offers **Smart Trac™** computerized ground balancing to cancel the effects of iron minerals in the ground. This does not affect the other (discrimination/target ID) modes. The All Metal Pinpoint mode can be used for pinpointing objects at moderate depth in most soils without prior ground balancing.

DISCRIMINATION

"Discrimination" refers to a metal detector's ability to ignore metal objects in selected categories, especially iron and aluminum. This makes searching an area where there's a lot of metal trash much more pleasant. The **Time Ranger™** offers a wide variety of discrimination features which you can select according to conditions and your personal preference.

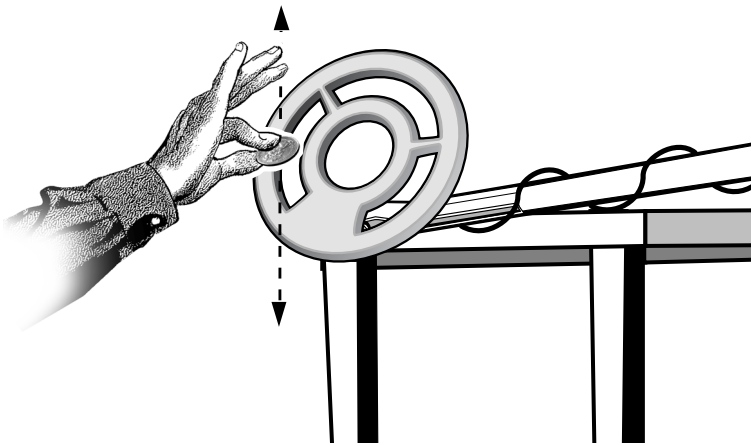
DEPTH READING

The estimated "Depth reading" is based on the strength of the signal. It is calibrated for typical coin-size objects. Small objects will read deeper than they actually are, and large objects will read shallower than they actually are.

AIR TESTING

There may be times when you want to test or demonstrate the metal detector without sweeping it over the ground, for instance if it's not fully assembled, or if you're indoors. Place the searchcoil in a spot where it's stable and more than two feet away from any large masses of metal, including the reinforcing steel which is usually present in concrete. If you're wearing a wristwatch or jewelry on your hand or arm, remove it. Then, test or demonstrate by waving metal objects ("targets") briskly several inches in front of the searchcoil.

The Smart Trac ground balancing system cannot be tested or demonstrated in air unless you happen to have appropriate specimens of iron minerals or electronic ferrite available.



Position of detector and object when air testing the Time Ranger™

Getting Started

Assembly

Assembling your Time Ranger™ is easy and does not require any tools. Using the following diagram as your guide, just follow these easy steps.

▲ To assemble the Time Ranger™

1. Using the supplied bolt and knurled knob, attach the search coil to the lower stem. Twist stem locking nut counter clockwise.

2. Press the button on the upper end of the lower stem and slide the lower stem into the upper stem.

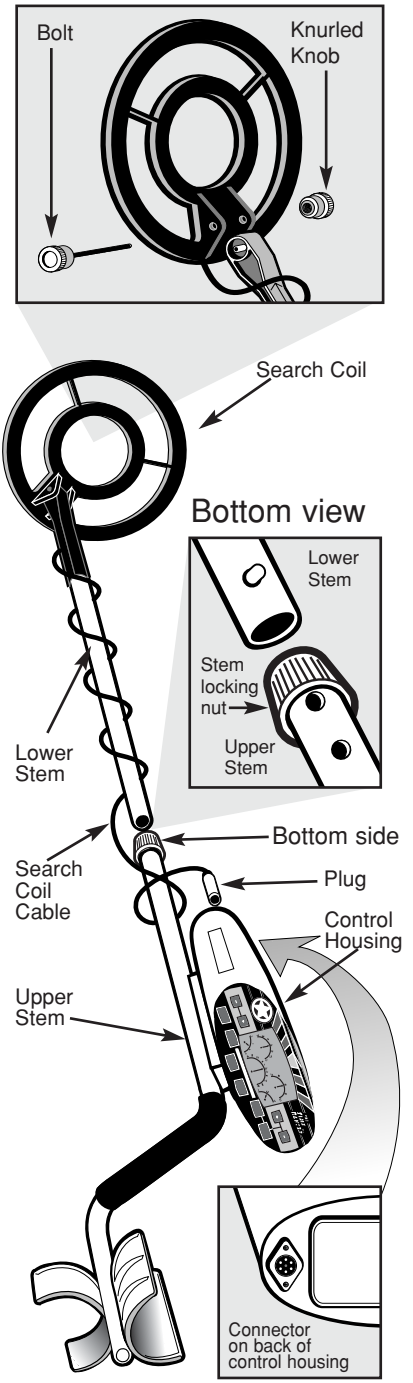
   Adjust the stem to a length that lets you maintain a comfortable upright posture, with your arm relaxed at your side. Tighten the stem locking nut.

3. Wind the search coil cable around the stem. Leave enough slack in the cable to let you adjust the coil when you are hunting on uneven ground. Then tighten the knob at the end of the search coil.

TIP:
To adjust the coil, simply loosen the knob.

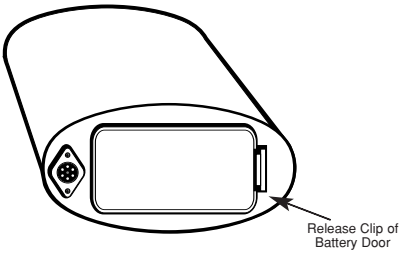
4. Insert the coil's plug into the matching connector on the control housing. Be sure the holes and pins line up correctly.

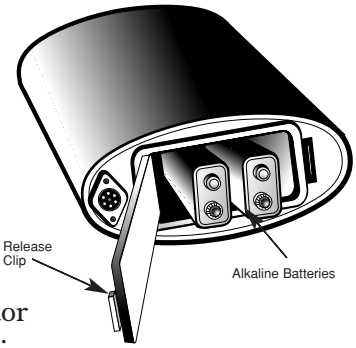
CAUTION:
- Do not force the plug in. Excess force will cause damage.
- To disconnect the cable, pull on the plug. Do not pull on the cable.



Batteries

IMPORTANT: Always use ALKALINE batteries only.
Do not use so-called heavy duty batteries.
Always remove the batteries for prolonged storage.





CHECK THE BATTERIES if your detector exhibits any of the following symptoms:

1. The unit does not turn on.
2. Low speaker volume.
3. Unit beeps continuously or erratically.

The LCD screen shows battery condition on the lower left. If the dial indicates "**R**", replace the batteries. If the dial indicates "**L**", the batteries are low and may go dead quickly, so you may want to replace them. When you replace batteries, replace both at the same time.

TIP: Battery life is typically about 20 hours, or a little longer if you use headphones.

▲Follow these steps to install the batteries.

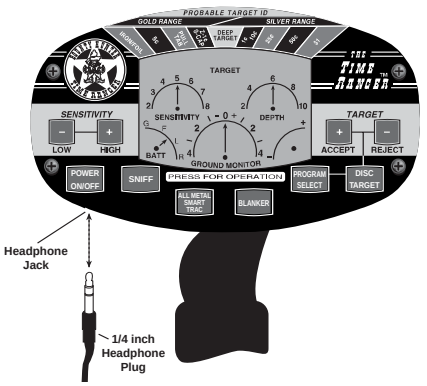
1. Carefully remove the battery compartment door by pressing the release clip on the right side of the door.
2. Snap one battery onto each of the terminals and place the batteries inside the compartment. Insert both of the batteries with terminals facing outward.
3, Replace the compartment door by carefully inserting opposite side of clip first. Then press down on clip side until battery door snaps into place.

HEADPHONES

The **Time Ranger™** is equipped with a standard 1/4 inch headphone jack for use with any stereo headphone that has a 1/4 inch plug. Use headphones with built-in volume controls, because without volume controls the sound may be too loud for you.

Using headphones improves battery life, and prevents the sounds from annoying bystanders. It also allows you to hear more clearly subtle changes in the sound when in the All Metal modes, particularly if you're searching in a noisy location.

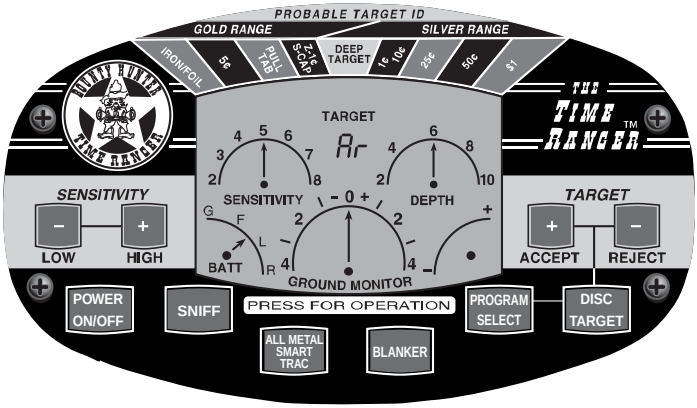
Don't use headphones when working in an area where it's necessary to be able to hear for reasons of safety, for instance around vehicle traffic, or where there may be rattlesnakes.



THE CONTROL PANEL

The control panel on the front of the control housing consists of the following zones:

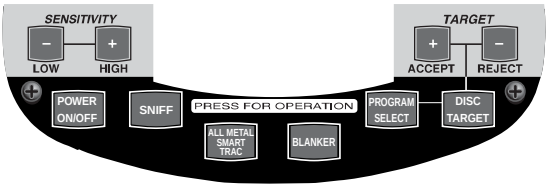
- along the top, Probable Target ID Fields which are used to interpret the target signal data displayed on the LCD screen.
- in the middle, an LCD screen which displays operating status and signal analysis data
- along the bottom and sides, touchpad "buttons" for controlling operation of the detector



Touch pads

The detector control panel includes several touch pads as shown and described in the following table. These touch pads are used to set detector operation.

Detector Touch Pads



POWER ON/OFF	**POWER ON/OFF** is used to turn the detector on.
SENSITIVITY – + LOW HIGH	**HIGH (+)** and **LOW (-)** are used to increase or decrease the detector's sensitivity.
PROGRAM SELECT	**PROGRAM SELECT** is used to select one of four predefined search programs. The first three are discrimination programs and the fourth is Self-Tuning all metal mode.
ALL METAL SMART TRAC	**ALL METAL / SMART TRAC** is used to select the All Metal Pinpoint mode of operation, to retune (reset) the All Metal Pinpoint mode if it has drifted; and, if it is held down for more than two seconds, to perform the Smart Trac computerized ground balancing maneuver.
DISC TARGET	**DISC TARGET** This button selects the programmable-target Discrimination mode. When already in that mode, if you tap the button, it activates the Accept and Reject buttons to allow targets to be programmed to be either accepted or rejected. When you're done programming targets, tap the DISC/TARGET button again to drop back into Discrimination mode ready to resume searching.
TARGET + – ACCEPT REJECT	**ACCEPT** and **REJECT** are used for Target Programming in the Discrimination mode.
BLANKER	**BLANKER** is used to enable the unit's **BLANKER** feature.
SNIFF	**SNIFF** is used to enable the **SNIFF** mode of operation.

Numeric Target I.D. Readout

This table shows the numbers typically associated with certain commonly encountered nonferrous metal targets. Older silver US coins usually read about the same as their modern clad equivalents. Modern quarter-sized dollar coins like the Susan B. Anthony and the Sacajawea read about the same as a quarter. Most Canadian coins which are somewhat similar in appearance to U.S. coinage are minted from a magnetic alloy which gives very inconsistent readings and may register as iron. Most one-ounce silver bullion rounds will read in the same range as the modern U.S. $1 Eagle bullion coin.

foil from gum wrapper	1	-	12
U.S. nickel 5¢ coin	20	-	33
aluminum pulltab	29	-	50
aluminum screwcap	55	-	75
zinc penny (post-1982)	68	-	78
aluminum soda pop can	70	-	105
copper penny, clad dime	90	-	100
quarter 25¢ coin, clad	110	-	122
50¢ coin, modern clad	124	-	132
old silver dollar coin	130	-	140
US silver Eagle $1 coin	130	-	165

Probable Target ID fields

The **Probable Target ID** fields above the top of the LCD screen represent the signal ranges produced by various coin and metal object types. When a metal target is detected, the microprocessor analyzes the signal and categorizes it based on what kinds of metal objects usually produce that kind of signal. The microprocessor then lights up an arrow along the top of the LCD screen which points to the probable target ID field which corresponds to that signal category.

For instance, if the detected signal fits within the parameters usually exhibited by zinc pennies and the electrically similar aluminum screwcaps, the microprocessor may categorize the signal as "zinc penny - aluminum screwcap". The LCD screen will then point an arrow to the ***(Z-1¢ S-CAP)*** field above the LCD screen.

Above the specific target ID fields, there are two general fields, Gold Range on the left and Silver Range on the right. Most silver jewelry is larger and of higher conductivity alloy than most gold jewelry, so silver jewelry will tend to fall to the right and gold to the left.

Since different metal objects can produce similar signals, and since minerals in the soil can distort the signals, the probable target ID's are just that-- probable. There is no way of knowing for sure what's down there other than to dig the target up and see. Experienced metal detector users have a rule of thumb-- "when in doubt, dig".

PROBABLE TARGET ID Fields

Probable Target ID	Description
GOLD RANGE SILVER RANGE	Located on the top portion of the control panel. The **GOLD RANGE** is located on the left and the **SILVER RANGE** is on the right. Other metal types can appear in this range: for example, iron, foil and nickel appear under **GOLD RANGE** and copper pennies appear under **SILVER RANGE.**
IRON / FOIL	Indicates that the target is probably iron or foil. Time Ranger™ has four levels of progressive iron discrimination—from small to large. Some rusted oxidized iron may occasionally register in the **SILVER RANGE.**
5¢	Indicates that the target is possibly a nickel. Many gold rings register as **5¢**. A percentage of foil and many newer pull-tabs are still detected as nickels.
PULL TAB	Indicates that the object is probably a pull-tab. Some small gold may also register as a pull tab.
Z-1¢ S-CAP	Indicates that the target is probably a zinc penny (post 1982) or a screw cap. This target ID is usually accompanied by a medium tone. Other targets, such as large gold, may also register in this field.
DEEP TARGET	Indicates that the target is out of identification range.
1¢ 10¢	These four fields indicate a coin type or an object or metal within similar detection range. Many other objects are identified in this range: for example, copper, brass and oxidized metals such as cans, jewelry, tokens, medals, or even junk metal objects that fall in the same range. Copper pennies (pre-1982) will usually register in the 1¢/10¢ range.
25¢	
50¢	
$1	

Target Detection Dial

The Target Detection Dial is in the lower right-hand corner of the LCD screen. When the machine detects a target, an arrow will point to "+" if the target is accepted, and will point to "-" if the target is rejected.

OPERATION OF THE METAL DETECTOR

Introduction: Selecting operating modes

The Time Ranger offers three basic types of operation:

1. **Discrimination with visual target identification.** This type of operation requires the searchcoil to be in motion over the target for the target to be detected. The Time Ranger offers an array of discrimination modes: three preprogrammed modes accessed by the PROGRAM SELECT button, a fully programmable mode accessed by the DISC/TARGET button, and a target-activated mode accessed by the SNIFF button.

2. **All Metals "pinpoint".** This mode is used primarily for locating precisely where the object is so that it can be dug with minimum effort. This mode does not provide target ID, and does not require the searchcoil to remain in motion.

3. **Self-Tuning mode.** This is a high-sensitivity mode which detects all metals, does not provide target ID, and does require the searchcoil to remain in motion to detect a target.

When the machine is first turned on, it goes to Preset Program #1. To access another mode, tap the corresponding button. If the other mode you want is a different Preset Program, tap the PROGRAM SELECT button until you've stepped to the one you want, as indicated on the display screen.

If you are in a mode other than one of the Preset Programs, and tap the PROGRAM SELECT button to get back to the Preset Program selection, it will return to the Preset Program you were previously in.

DISCRIMINATION & TARGET ID MODES

Preset Program #1 (low discrimination)

When the machine is first turned on, it goes to Program #1. This is a motion discrimination & target ID mode which rejects iron and foil, as indicated by the **R**'s under those categories on the display screen.

Preset Program #2 (medium discrimination)

If you're in Program #1 and tap the PROGRAM SELECT button, it'll step you to Program #2. This program is like Program #1, but it also rejects pulltabs. Nickels are still accepted.

Preset Program #3 (high discrimination)

If you're in Program #2 and tap the PROGRAM SELECT button, it'll step you to Program #3. This is a motion discrimination & target ID mode like Program #2, but it also rejects targets in the zinc penny/ screwcap category, as indicated by the **R**'s under the corresponding categories. Nickels are still accepted.

If you're in Program #3 and tap the PROGRAM SELECT button again, it'll step you to Program #4, which is entirely different.

Discrimination/Target system
(fully programmable)

The Discrimination/Target system gives the user the ability to accept or reject any target category, including 4 levels of iron. Its discrimination (DISC) mode is accessed by tapping the DISC/TARGET button. When the machine is first turned on, it detects ("accepts") all target categories. This makes it handy to use for ID'ing targets which have been detected in the Self-Tuning all metals mode (preset Program #4).

When you're already in DISCrimination mode, if you tap the button again, it switches to TARGET programming mode. In this mode, the ACCEPT and REJECT buttons are activated, and the machine does not detect targets because it's waiting for you to enter ACCEPT or REJECT target category selections. If at any time you are finished making ACCEPT or REJECT selections, just tap the button again, and it'll drop back into normal DISC operation.

TARGET PROGRAMMING MODE: In this mode, the machine is waiting for you to select which target categories you want to accept (see and hear), or reject (ignore). The machine flashes a blinking

arrow in the category it's waiting for you to decide. If you want to accept that category, press ACCEPT and the machine will step to the next category. It will also erase an **R** if there had previously been one. If you want to reject that category, press REJECT and the machine will place an **R** under that category to remind you that that category is now rejected, and the arrow will step to the next category. When you have the target categories selected the way you want, just tap the DISC/TARGET button, and it'll drop out of TARGET programming mode back into DISCrimination mode.

The iron category is a special case. Iron is broken down into four iron levels, which are indicated below the word TARGET on the display screen. **Ir1** is small or deep iron objects. **Ir2** is small to medium iron objects, or iron objects which are relatively deep. **Ir3** is medium size or depth iron objects. **Ir4** is large shallow iron objects. For certain types of relic hunting you may want to select some iron categories and reject others; however in general you will probably want to reject all four categories.

To erase all **R's,** hold the DISC/TARGET button down for 3 seconds.

▲**Blanker** ("zap")

"Blanker" is not an operating mode, but a feature. It is different from "blankers" found on some other metal detectors, and is similar to the "zap" feature found on a few other models. The purpose of the blanker is to automatically reject targets in the category of a known metal object which was just detected. Here's how it's used.

If you're in programmable the discrimination mode, and you detect an object in a category you don't wish to find, just tap the BLANKER button. An **R** will be added under that category and other objects in that same category will be rejected.

Note: Objects in classifications 1/10¢ and higher cannot be blanked. To reject targets in those categories, you have to use either SNIFF or the DISC/TARGET mode.

▲To use the SNIFF Feature

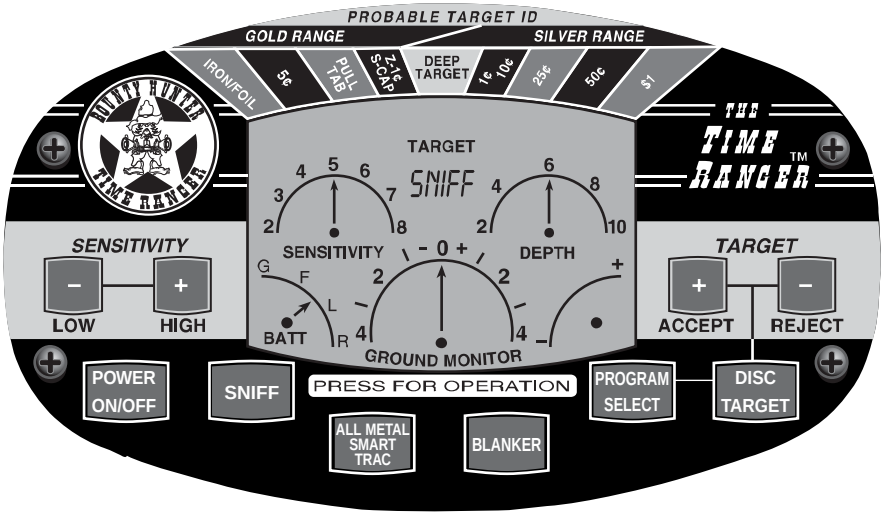
The SNIFF feature allows you instantly reprogram the DISC/TARGET mode to detect only targets of a type which the detector has just “seen”. Here’s how to use it.

1. If you’re not already in DISC/TARGET mode, tap the DISC/TARGET button.

2. Sweep the searchcoil over a target of the type you wish to detect, excluding all other targets. Note the numerical target readout.

3. Tap the SNIFF button. the word SNIFF will appear on the screen. if there were any R’s on the screen, they will disappear.

4. The machine will now reject (ignore) all targets, except those which register within +/- 15 counts of the numerical value of the target which was “sniffed”.



All Metal Modes

All Metal Pinpoint mode When the ALL METAL-SMART TRAC button is pushed, the detector switches to the All Metals Pinpoint Mode. This mode detects all metals and unlike the other modes, does not require to the searchcoil to remain in motion to detect a target. However, because this mode tends to drift, you may frequently have to tap the button again in order to retune (reset) the signals to zero in order to restore sensitivity. For instructions on how to pinpoint targets, see page 23.

SmartTrac™ (ground balancing)

Computer-assisted ground balancing increases the usable depth of the All Metals Pinpoint Mode and the Self-Tuning all metals mode (Program #4). It does this by cancelling interfering signals from iron minerals in the ground. *This is a feature for the advanced user.*

PROCEDURE FOR GROUND BALANCING

1. With the searchcoil more than half a foot above the ground, press and hold the ALL METAL/SMART TRACK button.

2. Immediately lower the searchcoil to within about half an inch of the ground.

3. When you hear a wobbly tone (in about 2 seconds), release the button.

▲The meaning of the beeps.

1. WARNING BEEP After you've been holding the button down for 1 second, there's a beep to remind you not to hold the button down unless you are intending to ground balance. When the computer attempts to ground balance, your existing ground balance setting (if any) will be lost.

2. WOBBLY TONE After you've been holding the button down for 2 seconds, there's a wobbly tone which tells you the computer is ready to ground balance. When you release the button, the computer will attempt to ground balance.

3. HIGH “SUCCESS” BEEP A high tone after you ground balance means that the attempt to ground balance was successful.

4. LOW “FAILED ATTEMPT” BEEP A low tone after you’ve attempted to ground balance means that the attempt failed. The computer will decide not to ground balance if there is a large piece of metal under the searchcoil, if the ground is of a type which cannot be balanced (for instance salt water), or if you lifted rather than lowered the searchcoil. If the attempt to ground balance fails, the computer sets the ground balance to zero.

▲Ground balance setting display

When you ground balance, the ground balance setting is displayed briefly on the LCD screen. It is also displayed every time you tap the ALL METAL/SMART TRAC button.

With a little experience, you’ll know what number to expect where you hunt. If there is metal where you ground balance, and the attempt is successful, the number displayed will be higher than normal. This is one way you can know that you need to try again in a different spot.

For additional tips on ground balancing, see page 27.

Please note that the Smart Trac feature is for the advanced user. Beginners should first master using the pinpoint mode without ground balancing.

Preset Program #4 (Self-Tuning All Metal Mode) Under most conditions, this is the most sensitive mode in the machine. Its primary uses are for gold prospecting and for relic hunting in areas where there's not a lot of unwanted metal trash. This mode requires the searchcoil to be in motion in order to detect a target, and does not provide target identification. This mode is for the advanced user, and is often unusable unless ground balancing has been done first.

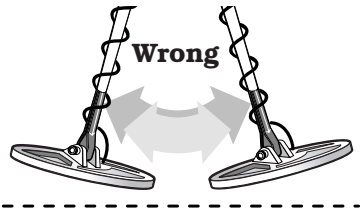
If you tap the PROGRAM SELECT button while in Program #4, it'll recycle the program selection back to Program #1.

Search Technique

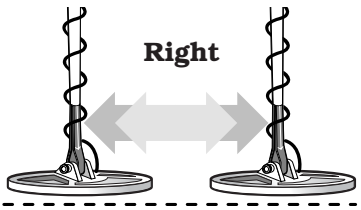
How to sweep the searchcoil

▲ Coil Movement

- When sweeping the coil, be careful to keep it level with the ground about 1" from the surface—never swing the coil like a pendulum The following diagrams illustrate incorrect and correct coil movement.
- Make sure you keep your search coil consistently about 1" above the ground as you sweep. Raising the coil during the sweep or at the end of the sweep will cause false readings.
- Move slowly—hurried movement will only cause you to miss targets.

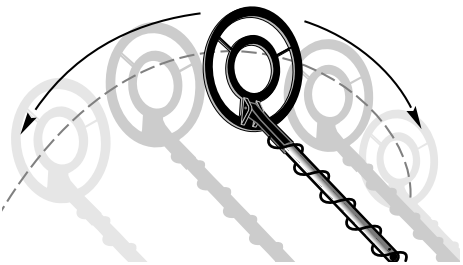


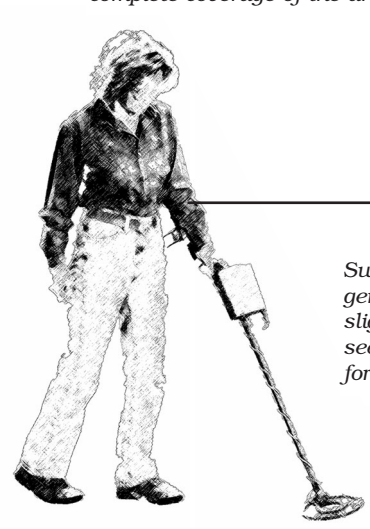
Do not swing the coil like a pendulum.



Swing the coil level with the ground.

Swing the coil in a half-circle and repeat this motion every step you take to guarantee complete coverage of the area.





Swing the search coil gently side-to-side, slightly overlapping each seep as you move forward.

▲How to pinpoint targets

When you've discovered a target you wish to dig, do the following:

1. Hold the searchcoil about half an inch above the ground, off to the side of where you think the target probably is.
2. Tap the ALL METALS/SmartTrac touchpad button. This will put you into the All Metal Pinpoint mode. NOTE: unlike the other modes, this mode does not require the searchcoil to be in motion to detect a target.
3. Lift the searchcoil slightly, and pass it over the target. The sound will be loudest over the center of the target.

To Narrow It Down Further:

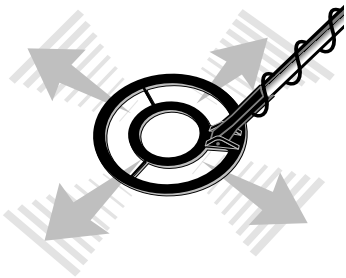
4. Now that you know about where the target is, again lower the searchcoil to about half an inch above the ground, near the center of the target but not right over the top. Tap the button again. The sound will instantly go away.
5. Lift the searchcoil slightly and move it horizontally over the target. The audible response zone will be much narrower. If you move the searchcoil around right and left and also forward and back, making an "X" pattern over the target, you can determine the location of the target usually within an inch or two.

NOTE: If at any time it seems like the signal may be drifting, just tap the button again. This restores the signal to its zero level.

▲Pinpointing a target in the Self-Tuning mode

Follow these steps for best results when attempting to pinpoint a target, in the self-tuning all metal mode.

1. When you hear a tone response indicating a buried target, continue sweeping the search coil over the target side-to-side pattern.
2. Keeping your eyes on the ground, notice where the “beep” occurs as you move the search coil slowly side-to-side.
3. Move the search coil straight forward and straight back towards you a couple of times.
4. Again, keeping your eyes on the ground, notice where the “beep” occurs.
5. If necessary, “X” the target at different angles to zero in on the exact spot on the ground where the “beep” occurs. The following diagram illustrates the proper “X-ing” technique.



Try drawing an X over the location where the tone is being emitted.

TIP: If “X-ing” the target does not yield one point, try finding the perimeter of the object by “circling” the object. Many large objects will seem irregular in size and shape.

▲ Retrieving Targets - Some Tips

Targets which have been buried a while usually develop an oxide and clay coating so they look almost like dirt. You can be looking right at it and not know it.

If you're in a situation where you can dig a hole without damaging turfgrass etc., there are two popular ways of quickly recovering the target.

1. Dig out enough dirt that you probably have the target, and spread it out over the ground surface. Then locate the target in the spread-out dirt.
2. Dig the dirt out handful by handful, passing each handful over the searchcoil to see if it beeps. When it does, the target is right there in your hand. (**Note:** Program #4 is the best mode for this. If you haven't ground balanced it, it may "see the dirt", but the handful with the metal in it will be louder.)

Once you've recovered the target, ALWAYS CHECK THE HOLE AGAIN! There is often more than one object to be retrieved.

After you've made sure that you've recovered all targets from the hole, ALWAYS REFILL THE HOLE. Empty holes look ugly and present a hazard.

▲ False signals and chatter; using the Sensitivity control

At times the machine may "beep" when there's nothing there, or at least it seems like there's nothing there. There are three main causes of this: electrical interference, nuisance buried metal objects, and electrically conductive ground minerals. Usually, reducing the sensitivity by tapping the **Sensitivity Low** (minus) button will help, but sometimes other corrective measures will also be needed.

ELECTRICAL INTERFERENCE can be caused by powerlines, appliances, fluorescent and vapor type lamps, light dimmers, other nearby metal detectors, electric fences, radio transmitters and electrical storms. If you get noise even while holding the loop motionless in the air, the cause is electrical interference. By walking around with the metal detector, you can often "follow the signal" and track it back to the offending device, and simply turn the offending device off. If it's from a powerline or a communications transmitting antenna, reducing sensitivity is usually a satisfactory solution to the problem. Switching to another searchcoil, even of the same size, often helps, and switching to the smaller 4 inch searchcoil usually helps.

NUISANCE BURIED OBJECTS In some areas there is a lot of metallic trash which produces weak signals, including items buried deeply, and little bits and pieces of rusty iron and corroded foil which are shallow. These items can be detected, but they are often difficult to find because of their depth or small size. It may seem like the machine is beeping at nothing. The best solutions are to reduce sensitivity, and to discriminate out iron and foil. Using the 4 inch coil can also help by reducing sensitivity to deep targets and by giving a crisper "feel" on shallow targets.

Metal detectors are designed to "see" one metal object at a time. If pieces of iron are laying next to each other, such as can happen on sites where a building has burned or been torn down leaving lots of nails in the soil, this can confuse the machine into thinking there are nonferrous targets present. This can cause high tones to occur even though there is only iron metal present. The way you can tell the difference , is that a nonferrous target will usually beep consistently and in the same location, whereas false high tones caused by too much iron trash are inconstant and seem to wander around-- what experienced detectorists call a "nonrepeatable signal". The 4 inch coil provides better signal separation and so exhibits fewer false signals and better identification of good targets when searching under trashy conditions.

GROUND MINERALS In irrigated soils and in the wet areas of salt water beaches, electrically conductive salts can cause the ground signals to fall outside the range which can be ground balanced. This usually causes false low tones. The problem can usually be solved by reducing sensitivity and/or by discriminating out iron and foil.

In some areas, electrically conductive industrial minerals such as coke, slag, and charcoal have been dumped or used as landfill. Individual lumps of these materials can usually be quieted by reducing sensitivity and discriminating out iron and foil; however when the ground consists primarily of such materials, you may not be able to search quietly. In that case, you can tell the difference between nonferrous targets and "false signals" by their repeatability: a nonferrous metal target will usually give a consistent signal, whereas false signals from ground minerals are inconsistent and seem to wander around randomly.

Rarely, natural graphite, graphitic slate, magnetite, or sulfide ore minerals can cause false signals. These can be dealt with in the same way as other ground minerals unless you're gold prospecting.

THE 4 INCH COIL In many cases, the 4 inch accessory coil will reduce problems with electrical interference slightly, and "slightly" is often all you need.

The 4 inch coil is almost always superior to the 8 inch in dealing with problem ground minerals. It's the preferred coil for gold prospecting.

▲Estimating target size, depth, and shape

The **Time Ranger**™ provides a readout of estimated depth when in the discrimination ID modes. The estimate is based on the presumption that it's a coin-sized target. But what if it's not a coin sized target?

The most common example is that of an aluminum can. It will usually I.D. as a zinc penny or a dime. And, its large size will give a strong signal, tricking the microprocessor into thinking it's a shallow coin. Here's how to tell the difference.

Tap the ALL METAL button to put the machine into All Metal Pinpoint operation. With the searchcoil close to the ground sweep back and forth to get a feel for the target response.

Now, continue to sweep back and forth as you slowly raise the searchcoil higher and higher. If the response diminishes quickly and never gets very broad, the target is probably a coin. If the response diminishes slowly as you raise the searchcoil, and you get a broad response, the target is probably an aluminum can. If you practice this by laying a coin and an aluminum can on the ground, after you've done it several times you'll know the difference, and you'll probably never have to dig another aluminum can again. And, you'll know whether it was deep or shallow. (This technique also works in Self-Tuning All Metal operation, which is Preset Program #4.)

Objects which are ring-shaped, or flat and round like coins, tend to give a narrower, crisper response than an object of similar size but bulkier shape. The easiest way to demonstrate this is with an aluminum screwcap from a soda pop bottle. In its normal shape, it occupies a volume, and gives a somewhat broader response than that of a coin. But if you flatten it, the response will be crisper and coinlike. Again, these differences are most readily noticed in All Metals operation.

Long skinny iron or steel objects such as nails usually give a double response when scanned lengthwise, and a weaker single response when scanned crossways. This is most noticeable in the Self-Tuning All Metals mode (Preset Program #4). However, a coin on edge can give a similar response, so rely on both target ID data as well as "target feel" to distinguish between different kinds of objects.

▲ Tips on ground balancing

When the **Time Ranger™** first turns on, the ground balance is preset to give a positive response on all soils. This means that if you are in either of the All Metal modes, the audio tone will get louder as you lower the searchcoil to the ground.

Many soils are low enough in iron minerals that the All Metal Pinpoint mode normally used for pinpointing does not need to be ground balanced. If you don't ground balance, when you pinpoint, tap the ALL METAL button with the searchcoil almost touching the ground, and then raise the searchcoil slightly to sweep back and forth. This way the machine will be silent except over the metal target.

The Self-Tuning All Metal mode (Preset Program #4) nearly always requires ground balancing to be usable. The discrimination modes are not affected by ground balance.

To properly ground balance, it is necessary to find a spot without metal. Before you attempt to ground balance, sweep back and forth to see if it seems like a metal target is present. If so, first locate what seems to be a clear area and then ground balance. After you've ground balanced, sweep back and forth to see if there is little if any response to the soil. If so, you've successfully ground balanced. If not, there may have been metal present where you attempted to ground balance, so find another promising spot and try again. If you can't find a spot to successfully ground balance, it's time to give up. Turn the machine off, turn it on again so the ground balance preset will be restored, and then use the machine without ground balancing.

In most areas, once you've ground balanced, the ground balance setting will remain satisfactory for a long time. However, if the soil has been disturbed by digging or bringing in fill dirt, or if it's in a geologically complex setting such as is commonly encountered in gold prospecting areas, you may have to frequently rebalance to accommodate changing soil conditions.

When you ground balance, the numerical value of the ground balance setting will momentarily appear on the LCD screen. In general, sandy or gravelly soils will tend to read in the 45 - 90 range, light colored loams and clays will tend to read in the 75 - 120 range, and red clays will tend to read in the 100 to 200 range. To express it in other terms, in general the more highly weathered and oxidized the soil is, the higher the numeric reading will be.

If you know through experience what the ground balance should read in a particular area, if you inadvertently ground balance over metal you'll know it immediately because the number will be higher than it should be. If this happens try another spot.

The Ground Monitor dial indicates how much iron mineralization is present. For it to work, you have to be sweeping the searchcoil over the ground. The higher the mineralization, the more necessary it is to be ground balanced in order to get the best depth in the All Metal modes.

If you are doing relic hunting, you can use SMART TRAC to take data on the soils, which you can then plot on a site map. In this way you may be able to locate areas which have been dug, backfilled, or subjected to fire. This information in turn helps to reveal the history of the site.

If you are mapping the soils of a site using SMART TRAC, the Ground Monitor readings can provide additional information. To use the Ground Monitor for geophysical mapping, "pump" the searchcoil up and down a few inches over the spot you wish to take a reading, until the dial stabilizes, which will usually happen in a couple seconds. This technique gives more repeatable readings than sweeping horizontally.

Types of metal detecting: descriptions and tips

▲"Coinshooting"

"Coinshooting" is searching for coins, usually in places like parks, schoolyards, church lawns, and people's residential yards. In most places where coins are likely to be found, there's a lot of aluminum trash like pulltabs and bottle caps, as well as steel bottle caps and often nails. Sometimes there's jewelry. You'll usually search using discrimination to get rid of the iron and the aluminum trash, even though that'll cause you to miss some jewelry.

Much coinshooting is done in lawn areas, where digging holes would cause damage to the grass. Recovering targets is usually done by carefully cutting a slit in the turf with a knife, and tamping it firmly when you're finished. In these situations you can't recover deep targets, so you can cut down on nuisance signals by reducing the sensitivity.

When searching on private property, first get the permission of the property owner. Most of the public places where one would be likely to do coinshooting are city, county, or school district property. Usually there's no ordinance prohibiting use of a metal detector as long as you're not causing damage. However, sometimes such ordinances do exist, and administrators and security personnel often have the legal authority to prohibit any activity they don't like even if there's no ordinance against it. If there is a metal detecting club in your area, someone will usually know what areas can and can't be "beeped".

It's always a good idea to be ready to put your best foot forward when using a metal detector in a public place. Any trash you see or inadvertently recover, pick it up and put it in a pouch or pocketed apron. This way you can explain that you are performing a public service by helping keep the place free of trash, especially pieces of metal or glass that could endanger a child at play. Be proficient at recovering targets without causing damage to the lawn. Explain that whenever you find jewelry which has personal identifying marks such as a class ring, you make an attempt to determine the owner and to return it. When someone who questions what you're doing finds out that you are causing no damage and are actually performing a public service, usually from then on out you'll be welcome.

▲ Relic hunting

"Relic hunting" is searching for historical artifacts. The most common desired objects are battlefield relics such as bullets and weapons, coins, jewelry, harness hardware, metal buttons, trade tokens, metal toys, household items, and tools used by workmen and tradespeople. The most common unwanted metal is iron (nails, fence wire, rusted cans, etc.), but some iron and steel objects may also be valuable. If you're on a site where you may encounter unexploded ordinance, use caution.

Most relic hunting locations are in fields, forested areas and vacant lots where digging holes won't damage turfgrass, so having a detector with good depth sensitivity is important. Some places are so littered with iron that it's necessary to discriminate out iron in order to be able to search, even though you will miss some potentially valuable artifacts that way.

Before you go relic hunting, obtain permission from the property owner. If you intend to hunt on public land, check first with the administrator to make sure it's not illegal. Certain kinds of sites on both public and private land are protected by law from relic hunting. If there is a metal detecting club in your area, some of the members will probably know what the laws are in that area and which sites are and aren't off limits.

Relic hunting is most rewarding if you have an avid interest in history. In many cases, the value of a relic is not the object itself, but the story it's a part of-- what historians call "context" and archeologists call "provenance". A few pieces of rusty metal that tell a story of life in a specific place or even of a specific family or person hundreds of years ago, can capture our imagination and help to give context to our own lives now. But if those pieces of metal are mixed in with other similar stuff and their context lost, they become trash. So take the trouble to understand the site you're searching and keep track of where you found things.

The SMART TRAC and Ground Monitor features of the **Time Ranger™** can be used to map the soils on a site. (See page 20 and 27 for details). In this way you may be able to determine which areas have been dug, backfilled, or subjected to fire. This information in turn helps to reveal the history of the site.

To find promising sites to hunt, do some research in your local library, look for clues in old newspapers, and see what information you may be able to find on the Internet. Where did buildings used to be, which have since been torn down? Where did people gather for public events like dances and county fairs? Where did train and stage lines run? Where were the swimming holes? In almost every town there is a historical society and museum of local history. Most museums are grateful for anything they can put on display, and when you dig something you can't identify, the curator can often identify it for you. If you work closely with the historical society and the museum, landowners will be more willing to give permission for you to search on their property.

Some of the most promising sites for relic hunting are places which are being cleared for development. After the site is built on, whatever is there in the ground will be inaccessible. The property owner can often be persuaded that the site should be searched immediately while it is still searchable.

▲ Gold prospecting

Gold is found in many places throughout the Western States, Alaska, and in a few localities in the Appalachians. The old saying "Gold is where you find it", means that to find gold, you should look in areas where the yellow metal is known to be present.

The best areas for gold prospecting using a metal detector are usually hillsides, because hillsides can't be "cleaned out" by panning and dredging the way streams can. Also, gold on hillsides not far from its source vein tends to be larger (and hence more readily detected) than alluvial (placer) gold which tends to get pounded to pieces and worn away as it rolls along the streambed with the gravel during floods.

Gold is valuable because there's not much of it. Even in a good gold producing area, you'll often spend an entire day without finding any gold. Meanwhile you'll be digging bits and pieces of other metal-- birdshot, shells and bullets from hunting and target practice, bits of rusted barbed wire, chips off shovels and other mining tools, rusted tin cans, etc. "Hot rocks"-- rocks containing concentrations of iron oxides that sound like metal when you pass over them-- are also a nuisance in many gold areas. Discrimination is usually ineffective because the loss of sensitivity resulting from discrimination is enough to cause those little nuggets to vanish. If you've gone many hours without finding gold and are wondering if maybe there's something wrong with your metal detector or the way you're using it, the most important clue is this: if you're digging tiny pieces of trash metal, if you'd swung your searchcoil over a gold nugget, you'd have dug that too.

Because most gold nuggets are tiny, and are usually found in soil which is high in iron oxide minerals, serious gold prospecting requires a detector with high sensitivity and true ground balanced motion all metal operation. The 4" accessory searchcoil is preferred for gold prospecting because it detects tinier stuff and handles the ground minerals better. Run the machine with the sensitivity high enough to hear some noise from ground minerals, and "learn the language" of the sounds you hear. Headphones are recommended unless consideration for safety (for instance rattlesnakes) rules them out. Move the searchcoil slowly and deliberately, carefully controlling its height above the ground to minimize noise from the iron minerals in the soil. Rebalance the ground (activate Smart Trac) whenever you suspect the ground balance may be a bit off.

The Ground Monitor dial indicates the amount of iron mineralization in the soil. In most gold areas, especially alluvial (placer) deposits, the gold tends to be associated with iron minerals, especially magnetite "black sand". If you know this to be the case in the area you're working, you can maximize your gold recovery by concentrating your effort on areas where the dial indicates higher amounts of iron mineralization.

Gold prospectors are mostly a friendly bunch, and willing to spend some time showing a beginner how to increase your odds of finding the yellow stuff. Many will invite you to search on their claims (if they have any) once they get to know you. In some gold areas, a lot of the terrain is under claim, so you need to learn how to recognized posted claims and stay off of them unless you have the claim owner's permission to be there. Prospecting clubs such as the GPAA often own claims which are open to their members, and sponsor group outings to good gold areas.

To dig into the ground and pull out a precious piece of yellow metal that you are the first person on earth to see, can be a thrilling experience. If you love being outdoors, have patience, and can stay motivated by the prospect of finding that next nugget, then "beeping for gold" may be the hobby for you. Not many people get rich by gold prospecting, so the most important thing is to think of it as outdoor recreation that may pay some of the expenses, and to have fun doing it.

▲Cache Hunting

A "cache" (pronounced "cash") is an accumulation of money, jewelry, gold, or other valuables, which someone has hidden. When people bury a cache, they usually put it in a strongbox or in a jar.

To search for a cache, first you need a reason to believe the cache may exist. This means doing research. Some caches have been the subject of many stories you can read about in print, but you need to be able to sort fact from fiction. If you can get copies of old newspaper stories about the circumstances surrounding the hiding of the cache, you may find discrepancies which help you to judge the reliability of the information available. Often the best information on an old cache is to be learned from old timers who live in the area where the cache is thought to be. In the case of newer caches, often the only information is what can be obtained from family and acquaintances of the person who is believed to have hidden the cache.

The ownership of a cache is not always clear. Sometimes it belongs to the person or heirs of the person who hid it, sometimes it belongs to the owner of the property on which it is located, and sometimes it belongs to the person who finds it -- or some combination of the above. If the contents of the cache was stolen to begin with, that fact can also complicate the question of ownership. Find out what laws apply to the cache in question, and always make sure that the issue of ownership is resolved prior to recovering a cache.

Compared to a coin, a cache is usually large and deep. An oversize accessory searchcoil will help. You'll probably need to search in a ground balanced All Metal mode. Usually the Self-Tuning All Metal mode (Program #4) is best. However, for a really deep cache, it may be advantageous to search in the regular All Metal Pinpoint mode, frequently tapping the ALL METAL button to cancel drift.

Shallow water hunting

All **First Texas Products** searchcoils are waterproof, allowing you to search in shallow water up to a foot or so deep. However, if you're searching around water, be careful not to get the electronics housing wet. Avoid salt spray, as it will work its way into the control housing and damage the electronics-- such damage is not covered under warranty.

Both fresh and salt water beaches are popular places for metal detecting. Vacationers lose money and jewelry playing in the sand and in the water. It's usually easy to dig in a beach environment, and metal detecting is permitted on most beaches. Once in a while you may be able to recover for someone a piece of jewelry they've lost minutes before, which is a gratifying experience.

When searching on a beach, it's best to either search in Self-Tuning All Metal mode, or to use a minimum amount of discrimination, because the value of beach finds is largely in the jewelry rather than in the coins. You'll dig a lot of aluminum trash, but the digging's easy so it's no big deal, and you can tell people that you're helping to clean up the beach and make it safer for people's feet. You may want to use a special "sand scoop" for recovering valuables from the sand quickly-- most metal detector dealers sell these.

The electrical conductivity of the water itself can pose some challenges. You may get false signals when going into and coming out of the water, making it necessary to pay careful attention to keep the coil either in or out of the water but not to touch the surface. This effect may be observed in either fresh or salt water. In addition, salt water is highly conductive, and produces a strong signal which is like that of metal. When searching in salt water it will usually be necessary to reduce the sensitivity to minimum, and also to discriminate out iron and foil, in order to quiet the machine down enough to make it usable.

Troubleshooting

Common Problems

The following table lists common problems that you may encounter when using your metal detector.

Problem	Probable Cause(s)	Solution(s)
Detector is emitting false signals in the field.	• SENSITIVITY may be set too high. • Improper coil movement. • Highly oxidized metal.	• Reduce SENSITIVITY per instructions in this manual for your mode of operation. • Swing the coil more slowly. • Abandon the target—if the signal does not repeat as you sweep the same area, the target is usually highly oxidized (rusted) metal and not worthwhile.
• LCD readout is not "locking in" or identifying while passing over a target. • Detector emits more than one tone over the same target.	• More than one object over the area you are sweeping. • Odd, unrecognizable metal. • Highly oxidized metal. • SENSITIVITY may be set too high. • Iron minerals in soil.	• Use 4" coil accessory to narrow detection field. • Sweep over target at different angles. • Abandon the target—if the signal does not repeat as you sweep the same area, the target is usually highly oxidized (rusted) metal and not worthwhile. • Reduce SENSITIVITY per instructions in this manual for your mode of operation.
Detector not stable and has a pulsing, distorted tone instead of a clear one.	• Operating very near another detector. • Operating near power lines that can interfere with detector's frequency.	• Move at least 20 feet from the second detector. • Move away from power lines.
Detector is repeating a loud tone or constant, repeating tones.	• Batteries are low. • Coil or coil connection is damaged.	• Replace batteries per instructions in this manual. • Replace coil. • Check coil plug connection. • Turn detector off, then on again.

Learning more

Any hobby is a lot more rewarding if you take the trouble to learn more about it. Here is a list of organizations, magazines, and vendors to help you advance in the metal detecting hobby.

Organizations

Federation of Metal Detector & Archeological Clubs, Inc.
www.fmdac.com/sitemap.htm
The FMDAC is probably the largest organization of its type, with affiliated clubs all over the nation. Their website offers many resources, including information on legal issues relating to metal detecting.

Gold Prospectors Association of America, Inc.
www.goldprospectors.org
The GPAA is probably the largest "gold prospectors club". They publish their own magazine (see below), own a number of gold properties which are available for gold prospecting by members, sponsor exhibitions, etc.

Lost Dutchman's Mining Association
www.goldprospectors.org
An affiliate of the GPAA, which is concerned primarily with gold properties for use by members.

Magazines

Lost Treasure *www.losttreasure.com*
A major treasure hunting magazine, with emphasis on metal detecting.

Western & Eastern Treasures *www.treasurenet.com*
A major treasure hunting magazine, with emphasis on metal detecting.

Gold Prospectors *www.goldprospectors.org*
The official publication of the GPAA, quite a bit on metal detecting.

Vendors

Hays Electronics *www.hayselectronics.com* (928) 772-2624
Huge selection of treasure hunting and gold prospecting books and maps.

Specifications

Battery requirements:
two 9-volt rectangular alkaline batteries

Power consumption:
20 milliamperes quiescent

Battery life:
typically 20 + hours

Operating frequency:
6.9 kHz

Weight (with batteries):
2.9 lbs

Headphone jack:
1/4 inch stereo

Temperature range:
0 - 40 degrees C (32 - 104 degrees F)

Humidity:
0 - 95% noncondensing

Searchcoils:
concentric coplanar with resonant transmitter, waterproof, interchangeable

Ground balance resolution:
1 part in 256

Notes

Notes

Treasure Hunter's Code of Ethics

1. Respect the rights, property, and privacy of others.
2. Do not enter private property without permission.
3. Do not damage property, buildings, or vegetation.
4. Make yourself aware of federal, state, and local laws which may govern the use of metal detectors in certain areas.
5. Do not damage historical or archeological treasures.
6. If you find something the rightful owner of which can be identified, make the effort to return it.
7. ALWAYS refill any holes you may have dug.

First Texas Products, L.P.
5 Year Limited Warranty

Bounty Hunter Metal Detectors are warranted against defects in workmanship or materials under normal use for five years from date of purchase to the original user. Liability in all events is limited to the purchase price paid. Liability under this Warranty is limited to replacing or repairing, at our option, any Bounty Hunter Detector returned, shipping cost prepaid, to First Texas Products, LP. Damage due to neglect, accidental damage or misuse of this product is not covered by this warranty.

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www.detecting.com

BOUNTY HUNTER®
METAL DETECTORS

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